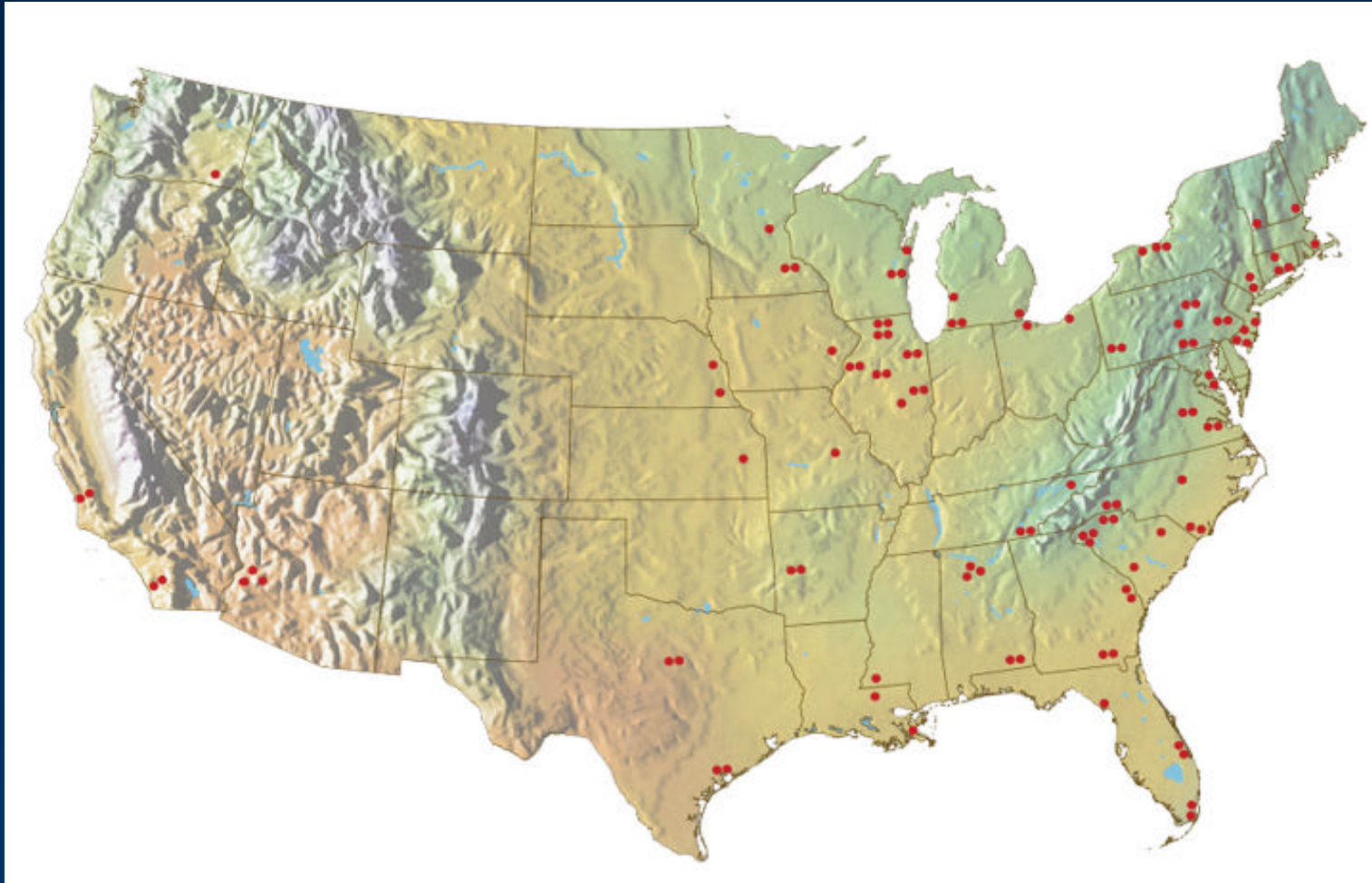


# **Robust Security at Nuclear Power Plants**



# 103 Nuclear Power Reactors




# Comparative Size of Targets



WTC  
208' wide  
1,353' tall

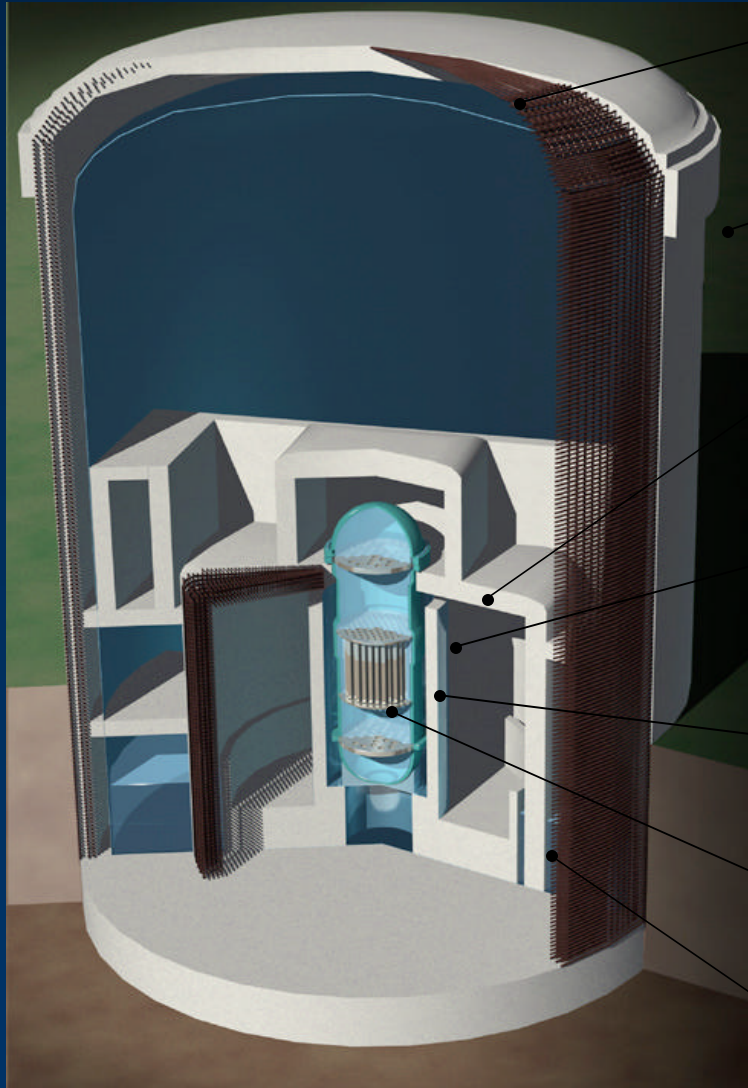


Containment Building  
130' wide  
160' tall



Pentagon  
1,489' wide (921' per side)  
71' tall

# Multiple Layers of Protection



Containment Vessel

1.5-inch thick steel

Shield Building Wall

3-foot thick reinforced concrete

Dry Well Wall

5-foot thick reinforced concrete

Bio Shield

4-foot thick leaded concrete with  
1.5-inch thick steel lining inside and  
out

Reactor Vessel

4 to 8 inches thick steel

Reactor Fuel

Weir Wall

1.5-foot thick concrete



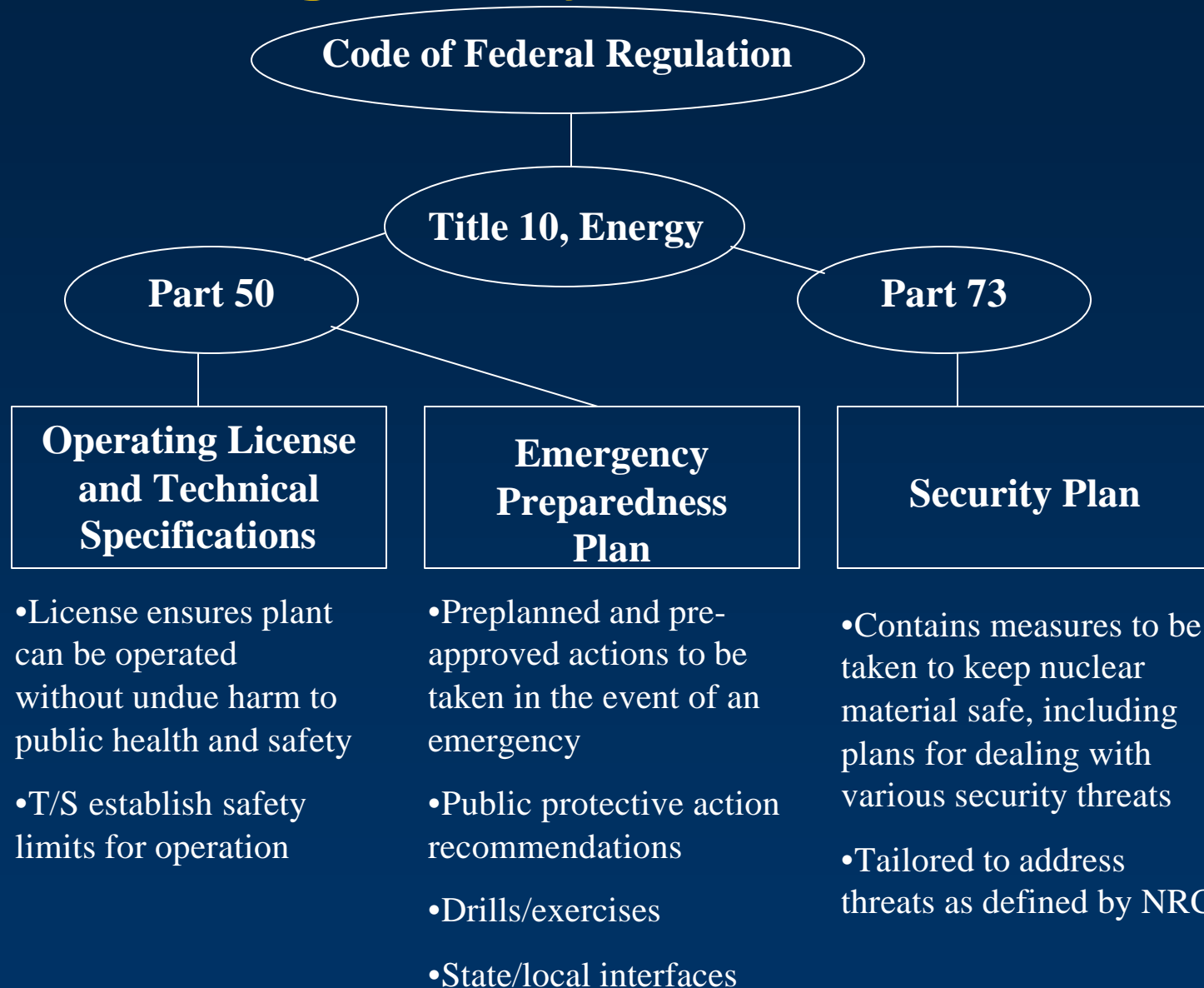


Courtesy of Sandia National Laboratories  
(no audio)

# Nuclear Plant Safety & Security

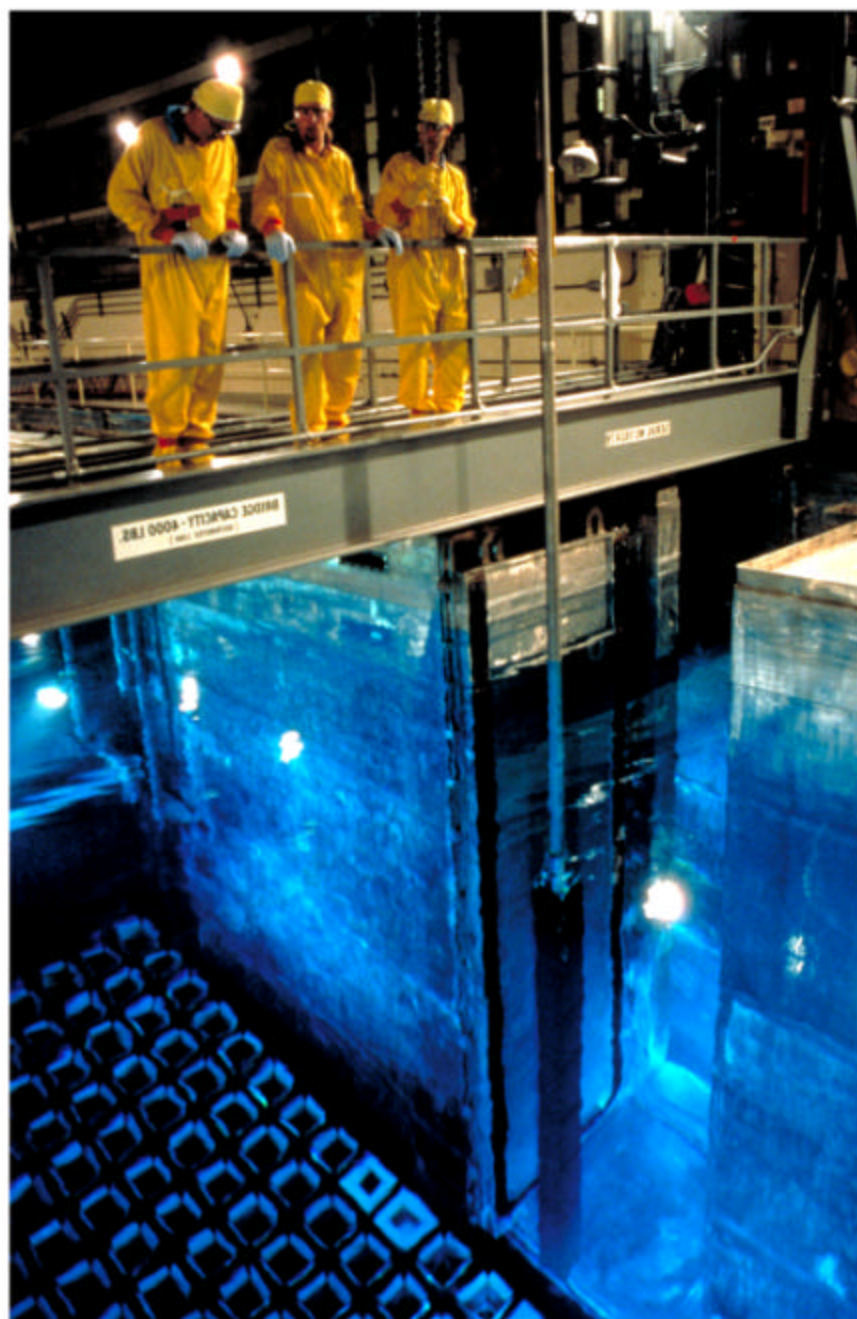
- NRC requirements and industry programs protect the public from the possibility of exposure due to a radioactive release caused by acts of sabotage.
- All plants have comprehensive measures for security and safety
  - Robust physical containment
  - Redundant and diverse plant safety systems
  - Trained plant staffs, skilled in accident and event response
  - Comprehensive emergency plans
  - Rigorous security plans and security forces
- Federally regulated in all phases of operation

# Regulatory Structure



All reviewed and approved by NRC, including revisions









# Nuclear Plant Security Areas

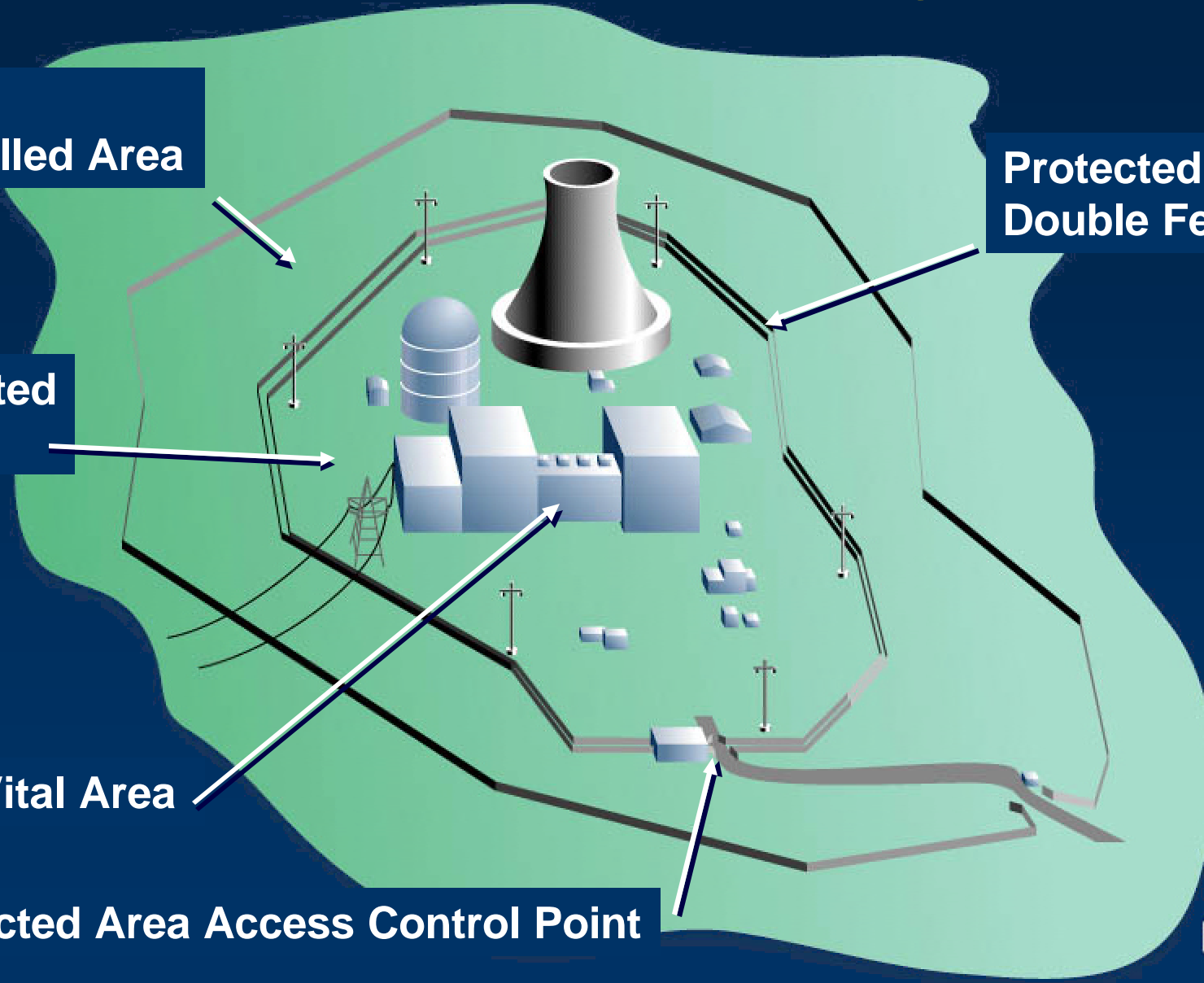
Owner  
Controlled Area

Protected Area  
Double Fence

Protected  
Area

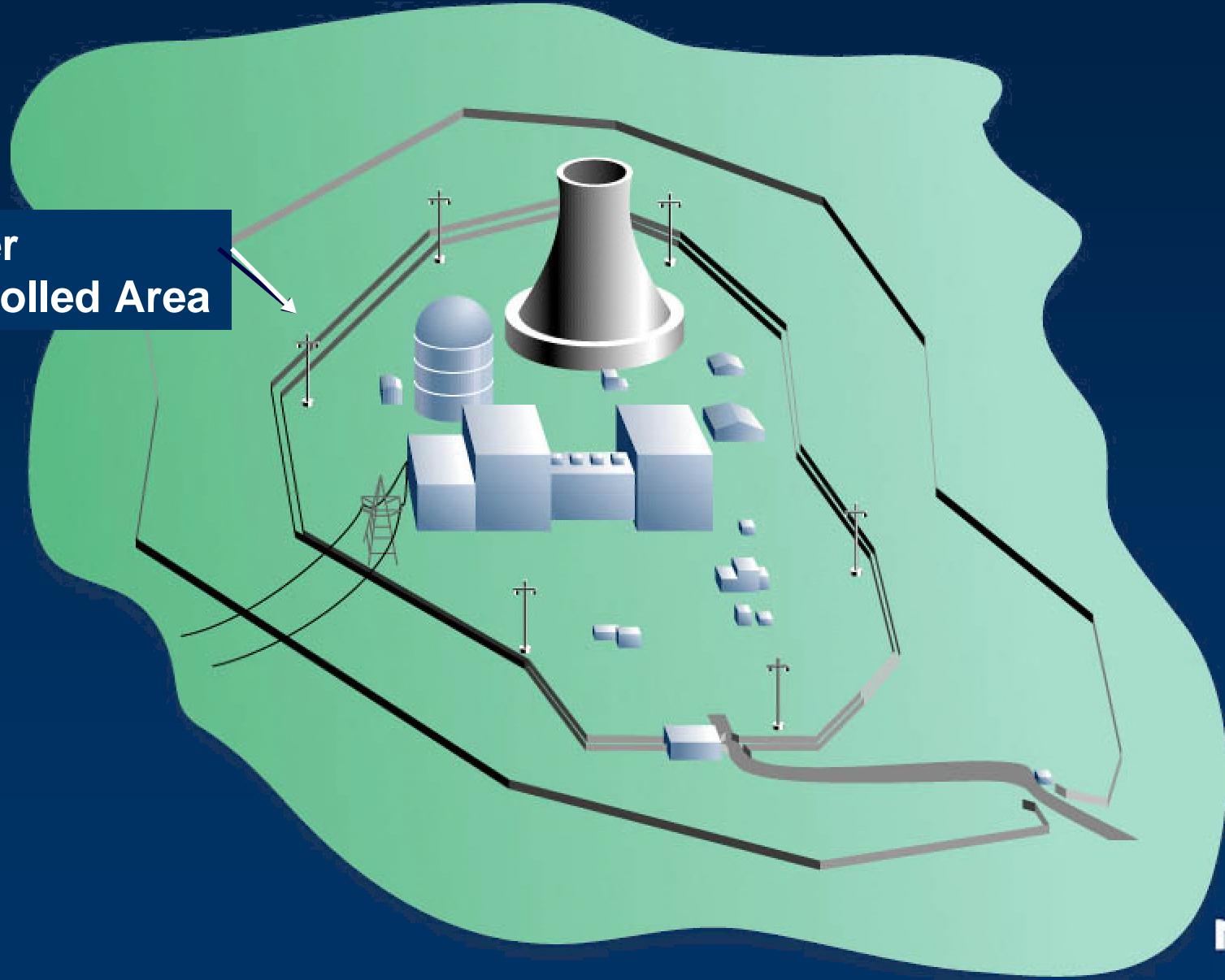
Vital Area

Protected Area Access Control Point



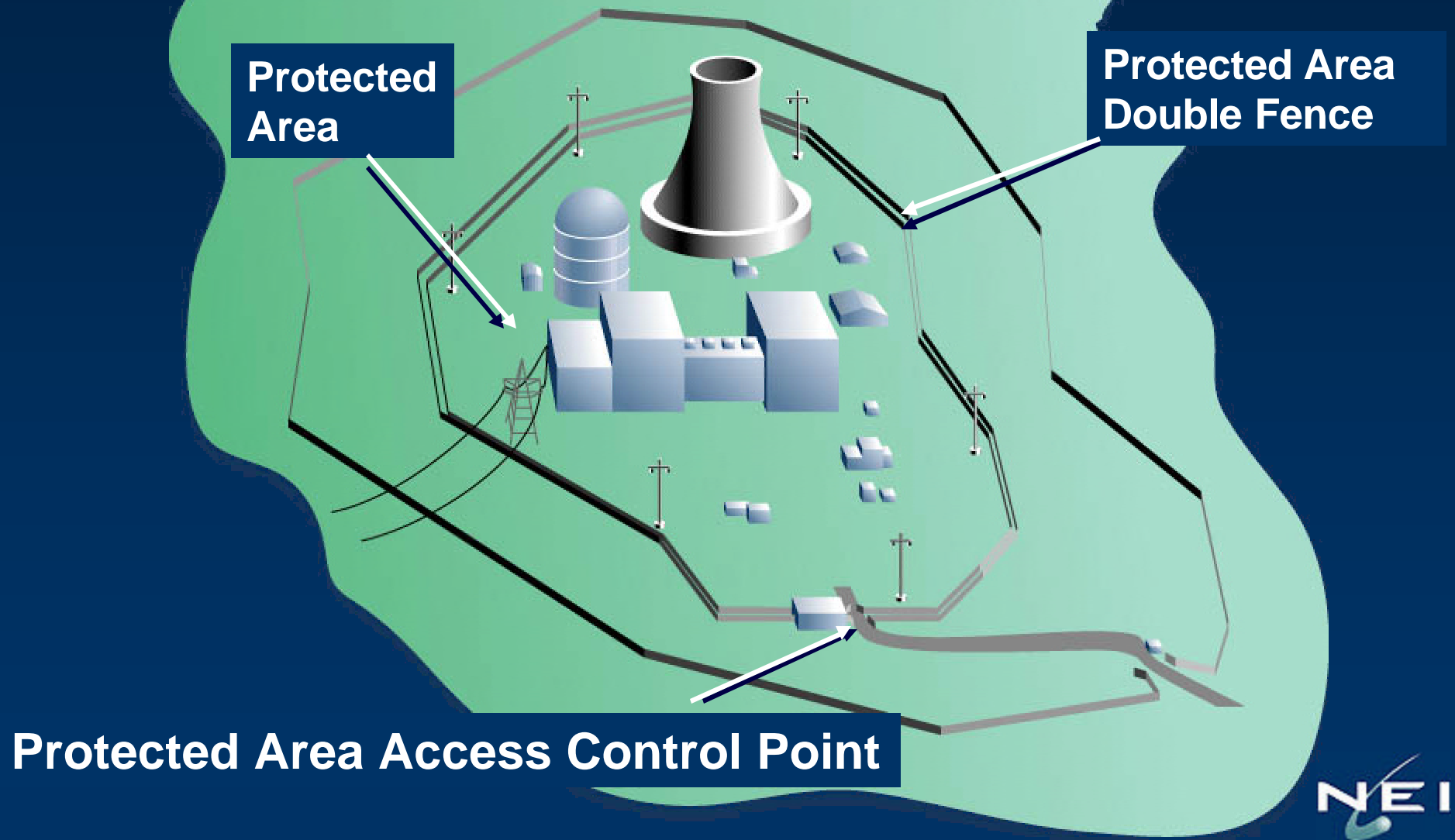
# Nuclear Plant Security Areas

Owner  
Controlled Area





# Nuclear Plant Security Areas





# Vehicle Barrier System

- Steel Cables
- Jersey and concrete barriers
- Natural terrain









## Protected Area Barriers

- Fence
- Intrusion Detection System
- Closed Circuit TV & Pan/Tilt Zoom Cameras
- Isolation Zone
- Facility Lighting
- System Monitoring Performed by Redundant Alarm Station Monitoring







# Nuclear Plant Security Areas

**Vital Area**



# Vital Area Barriers



- Concrete floors, walls and ceilings
- Steel locked and alarmed doors
- Key card access



# Protective Strategy



# Access Delay Barrier







# Defensive Fighting Position











# Security Force Profile

- Nationally, more than 5,000 trained professionals
  - On average 80 per plant site at \$35,000/year
- 67% have security experience
- 17% have college degrees
- High job satisfaction (>90% retention rate)
- Highly Trained
  - 270 hours of initial training
  - 90 hours/year of re-qualification
  - 30 hours/year of “anti-terrorist” tactical exercises

# Nuclear Plant Security Areas

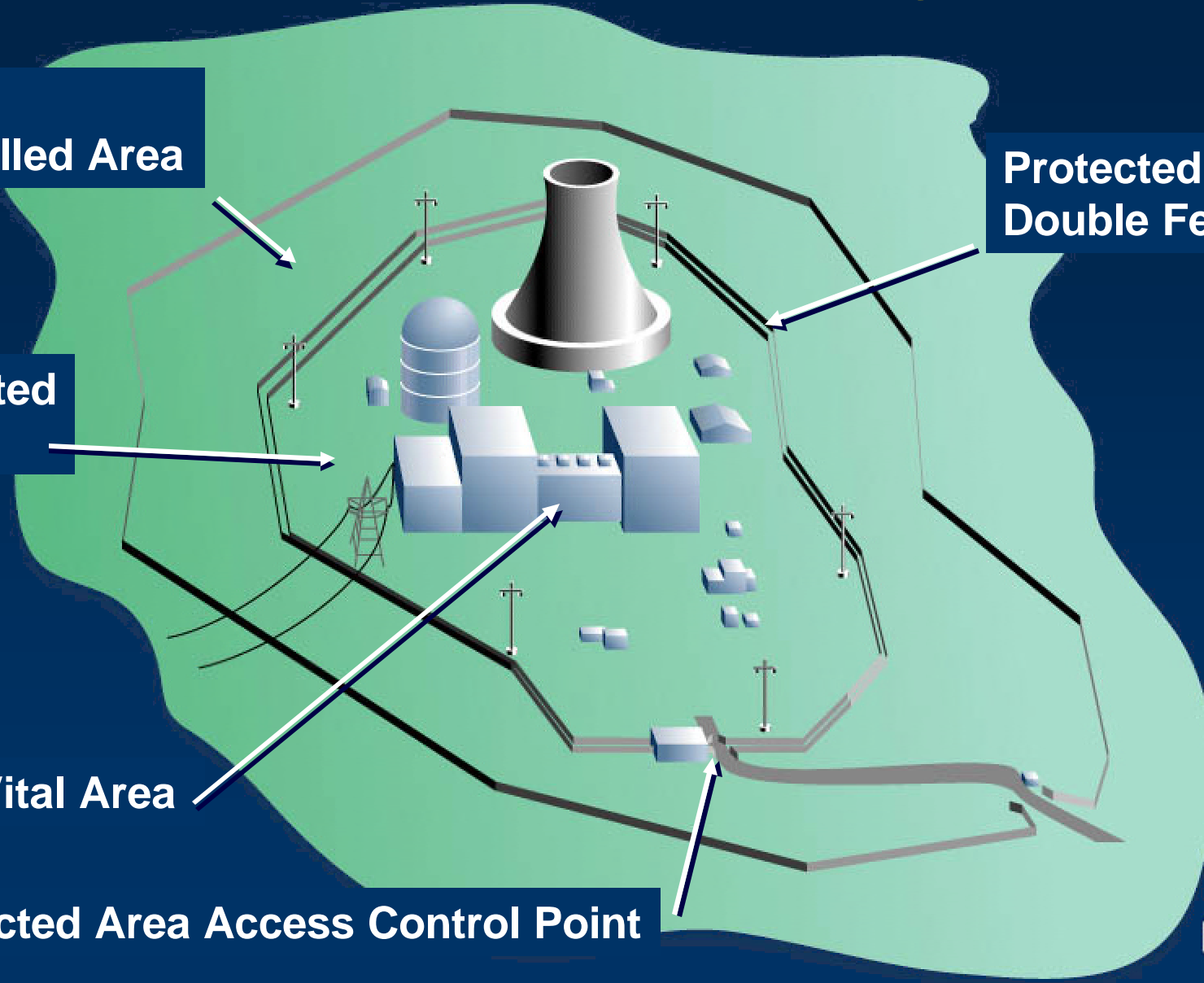
Owner  
Controlled Area

Protected Area  
Double Fence

Protected  
Area

Vital Area

Protected Area Access Control Point



# Continuing Actions

- Work with federal, state and local agencies to implement enhanced security procedures
- Increase dialogue among emergency planning personnel at all levels of government
- Coordinate with intelligence, law enforcement agencies
- Assess changing security, emergency planning and operating procedures
- Support Office of Homeland Security review